PRODUCER RESPONSIBILITY: OVERVIEW OF POLICY CONSIDERATIONS

BACKGROUND PAPER

STRATEGIC POLICY COMMITTEE

JUNE 5, 2007

On February 13, 2007 the California Integrated Waste Management Board adopted Strategic Directive 5, Producer Responsibility, which calls for Board staff to analyze the feasibility of various approaches to increasing producer responsibility and to make recommendations to the CIWMB Board by December 2007, and annually thereafter.

The purpose of this brief overview is to provide a progress update on the fact finding efforts of CIWMB staff with regard to existing policies and implementation schemes relevant to "producer responsibility." It serves as a first step toward a greater understanding of producer responsibility.

The overview covers:

I. What is Producer Responsibility, Extended Product Responsibility, Extended Producer Responsibility and Product Stewardship?

Internationally, the term "extended producer responsibility" (EPR) is widely used. It was coined in 1990 by Thomas Lindhqvist to describe a policy then emerging in Europe and now found in many countries in the industrialized world. Lindhqvist, a Swedish professor of environmental economics, defined EPR as the extension of the responsibility of producers for the environmental impacts of their products to the entire product life cycle, and especially for their take-back, recycling, and disposal.[1]

A key feature of EPR is a shift in the responsibility for the end-of-life (EOL) management of discarded materials from local government to private industry, thereby incorporating the costs of product collection, recycling, and/or disposal into product price. First mandated in Germany in 1991 as part of its packaging laws, EPR policies are now used around the world for a variety of products.

In 1996, the United States President's Council on Sustainable Development recommended a policy of "extended *product* responsibility," which it defined much more broadly as the shared responsibility of government, consumers, and all industry actors in the product chain for all the environmental impacts of a product over its life cycle, with no emphasis on the producer's unique responsibilities or on the post-consumer stage.[2] It is important to note that *extended product responsibility (EPR)* shares the same acronym *extended producer responsibility,* yet it has a different meaning.

Another term in use is *Product Stewardship,* which is similar to *Extended Producer Responsibility*, but with an emphasis on a shared responsibility.

Below are definitions for each of these terms as used by various organizations:

Extended Producer Responsibility (EPR) is a policy principle to promote total life cycle environmental improvements of product systems by extending the responsibilities of the manufacturer of the product to various parts of the product's life cycle, and especially to the take-back, recovery and final disposal of the product.

Thomas Lindhqvist[3]

EPR is an environmental policy approach in which a producer's responsibility, physical and/or financial, for a product is extended to the post-consumer stage of a product's life cycle.

Organization for Economic Cooperation and Development[4]

EPR is the extension of the responsibility of producers for the environmental impacts of their products to the entire product life cycle, and especially for their take-back, recycling, and disposal.

INFORM, Inc.[5]

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[1] Fishbein, Bette, *EPR: What Does It Mean? Where Is It Headed?* 1998. Accessed 5-14-07. Available at: http://www.informinc.org/eprppr.php

[2] Fishbein, Bette, *EPR: What Does It Mean? Where Is It Headed?* 1998. Accessed 5-14-07. Available at: http://www.informinc.org/eprppr.php

[3] Van Rossem, Chris and Naoko Tojo and Thomas Lindhqvist, *EPR, An Examination of its Impact on Innovation and Greening Products,* 2006. Page 2.

[4] Lynch, Allen. MSW - January/February 2007. Available online at: http://www.mswmanagement.com/mw_0701_guest_editor.html

[5] Fishbein, Bette, *EPR: What Does It Mean? Where Is It Headed?* 1998. Accessed 5-14-07. Available at: http://www.informinc.org/epr_00.php

Extended Product Responsibility calls on those in the product life-cycle--manufacturers, retails, users, and disposers--to share in the responsibility of reducing the impacts of products. US EPA[6]

Product stewardship efforts aim to encourage manufacturers to take increasing responsibility to reduce the entire life-cycle impacts of a product and its packaging – energy and materials consumption, air and water emissions, the amount of toxics in the product, worker safety, and waste disposal – in product design and in the end-of-life management of the products they produce.

It further states

….The greater the ability an entity has to minimize a product's life-cycle impacts, the greater is its degree of responsibility, and opportunity, for addressing those impacts.
Product Stewardship Institute (PSI) [7]

Regardless of the term used, a common element among the various PR programs that exist is that all stakeholders have a role and responsibility in reducing product impacts over the product life-cycle, even for programs that by definition emphasize producer responsibility. The CIWMB will need to consider what definition of PR to use. It could be one of the above or some combination.

Until that time, and for purposes of this paper and other materials and presentations related to the June 5, 2007 Producer Responsibility workshop, CIWMB staff use the term *Producer Responsibility* (PR) and the acronym EPR, both of which appear in the Board-adopted Strategic Directive 5; EPR, when used, refers to the internationally used *Extended Producer Responsibilit*y. As a point of further clarification, when CIWMB staff use the term "producer," it refers to the manufacturer of a finished products.

II. Key Elements of CIWMB Strategic Directive #5

As noted above, the CIWMB adopted Strategic Directive #5 on February 13, 2007. It states:

> SD-5: Producer Responsibility
> It is a core value of the CIWMB that producers assume the responsibility for the safe stewardship of their materials in order to promote environmental sustainability.

[6] US Environmental Protection Agency, website. Accessed 5-24-07. Available at: http://www.epa.gov/epaoswer/non-hw/reduce/epr/about/index.htm
[7] Product Stewardship Institute, Principles of Product Stewardship, Accessed on 5-14-07. Available at: http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=231

Specifically, the CIWMB will:

1. Utilize existing Board authority to foster "cradle-to-cradle" producer responsibility.
2. Seek statutory authority to foster "cradle-to-cradle" producer responsibility.
3. Analyze the feasibility of various approaches to increasing producer responsibility, including during the product design and packaging phases, and make recommendations to the CIWMB Board by December 2007, and annually thereafter.
4. Build capacity and knowledge in CIWMB on Extended Producer Responsibility (EPR) issues and solutions.
5. Develop and maintain relationships with stakeholders that result in producer-financed and producer-managed systems for product discards.

(http://www.ciwmb.ca.gov/agendas/mtgdocs/2007/02/00021620.doc)

A noteworthy element of Strategic Directive #5 is the reference to "cradle-to-cradle" PR approaches. While not directly specified, this implies the utilization of a system-based process that strives for zero waste, using a variety of approaches throughout the flow of materials/products so they can be continually used to their highest and best use. In other words, it places emphasis on "front end" approaches such as those at the design stage that source-reduce or facilitate recovery through better product design. These front end approaches should be used in addition to producer-managed and financed EOL product management schemes. Similarly, product/material flow (operational aspect) and financing (financial aspect) are not mutually exclusive; these should be considered in the context of a system as a whole.

III Key Considerations for Designing a Producer Responsibility (PR) Program

This section was adapted from several sources.[8,9,10,11] *The ideas presented are not endorsed by the CIWMB, rather this section highlights information available in other reports that might be helpful as the CIWMB considers PR approaches.*

[8] Clean Production Action, website, 5-14-07, available at: http://www.cleanproduction.org/Producer.Key.Examples.php

[9] Product Stewardship Institute, Principles of Product Stewardship, Accessed on 5-14-07. Available at: http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=231

[10] Van Rossem, Chris and Naoko Tojo and Thomas Lindhqvist, International Institute for Industrial Environmental Economics (IIIEE), *EPR, An Examination of its Impact on Innovation and Greening Products*, 2006. Available at: http://www.greenpeace.org/international/press/reports/epr

[11] Department of Environment and Conservation, New South Wales, Australia. *Report on the Extended Producer Responsibility, Preliminary Consultation Program*, accessed on 5-14-07. Available at: http://www.environment.nsw.gov.au/resources/reportepr.pdf

1. Products to Target

Current products that are covered by an EPR program somewhere in the world include:

- Automobile oil (aka used oil)
- Batteries (auto, Ni-CD
- Cameras (single-use)
- Carpet
- Cell phones and cell phone batteries
- Chemicals
- Computers
- Containers (for pesticides & other chemicals, and beverages)
- Copy machines
- Household hazardous wastes (HHW)
- Packaging
- Paint
- Pharmaceuticals
- Plastic bags
- Solvents, Flammable Liquids, Gasoline and Pesticides
- Televisions
- Tires
- Universal wastes
- Vehicles
- White goods

Other products mentioned in PR reports that could be considered, include:

- Automobile Shredder Residue
- Construction materials
- Fluorescent lamps
- Furniture
- Newsprint
- Textiles
- Toys
- Other HHW or Universal wastes

Some considerations to use when selecting a product that is appropriate for a PR program include

a. **Can the overall environmental impacts be reduced?** Favorable environmental impacts include not only a reduction in solid waste and toxic and hazardous substances, but also a reduction in Greenhouse Gas emissions (GHG) and other air pollutants, water consumption, and energy use. Products presenting end-of-life (EOL) challenges (e.g., hazardous components, low or negative market value) and products for which additional recovery is unlikely without design changes or take back are potential candidates. Participation in existing or planned multi-stakeholder and/or multi-media processes, and the effectiveness of these efforts, should be taken into consideration. (See Section IV for additional analysis.)

b. **Will the system be economically viable?** As long as landfill disposal is allowed and the potential positive value of recovered materials is less than disposal, the economics will likely be favorable. If economics are not favorable, funding likely will be needed, which calls for a system to collect, manage and disperse funds. Appropriate fees would ideally cover external costs, such as those costs associated with pollution, as well as provide appropriate incentives and cover the total costs. If the cost to set up and operate

system is not considered reasonable, it will be more challenging to justify the cost and implement the approach. Finally, a system that creates jobs is beneficial.

c. **Is the system is fair and equitable?** If the current EOL costs are covered by general taxpayer finances then there is greater potential to design a system so the party most responsible for pollution or other negative impacts pays a commensurate cost. A "level playing field" (one where every producer pays into the system and abides by the requirements of that system) is critical for the success of a producer-financed and managed system. A level playing field helps provide stable program funding and does not put any one producer at a cost or competitive disadvantage over another.

d. **Is the system relatively easy to implement?** Characteristics that indicated greater ease of implementation include: clearly identifiable producers, producers that have the capacity to take action, a well structured/organized industry sector, the ability to take advantage of an existing collection infrastructure, a relatively low number of fee collection/distribution points, and authority exists through legislation or policy for the CIWMB or other state entities to work on the product. If the authority doesn't exist, an anticipated and compelling environmental or public health impact improvement may provide sufficient basis for seeking additional CIWMB authority.

The remaining "menu" of considerations may or may not apply to a particular PR system. Each category of products likely will have some unique qualities requiring unique solutions to create the most effect PR approach.

2. Government-Mandated or Voluntary Participation

A few reports that analyzed several EPR programs found that the more effective EPR programs are based on government requirements or regulations (e.g., European Union Directives for Waste Electrical and Electronic Equipment (WEEE), End of Vehicle Life (EVL) and Restriction of Hazardous Substances (ROHS)) that mandate individual financial and/or physical take back of the product, ban some hazardous materials, set minimum reuse, recycling and recovery rates, and provide incentives for green product design. Products the have design changes attributed, at least in part, to government requirements include vehicles and electronic equipment.

Some manufacturers in the United States have set up voluntary take back programs; however, the return rate for these programs has often been very low and/or the programs are unable to provide data that clearly tracks and measures collection rates or provide other metrics to determine effectiveness. Voluntary programs financed by the consumers or waste management rate payers provide little to no incentive for the producer to redesign their products. Additionally, voluntary programs paid for by some manufacturers tend to result in a subsidy to other manufacturers who don't participate, yet whose products are recovered ("free rider" issue resulting from the absence of a "level playing field").

In some PR programs, the government mandates PR but does not address enforcement. This can impact program success. For example, retailers of rechargeable batteries are required to have a system in place for the acceptance and collection of used rechargeable batteries for reuse, recycling or proper disposal, however, statute does not identify an enforcement authority nor are penalties associated with noncompliance, should it be demonstrated.

3. Management of Legacy and Orphan Waste

Legacy waste or *historic waste* refers to products generated in the past, before an EPR program is operating, while *orphan waste* refers to products manufactured by a firm that is no longer in business. EPR programs need to consider impacts from historic and orphan waste as well as current end-of-life product waste. The responsibility for financing the management of orphan waste can be shared proportionally to each producer's respective share of the market or each producer's return share.

4. Use of Standards, Goals, and Restrictions

There are several types of standards, goals or restrictions that may be directly part of an EPR program or may complement it, having been established previously or through a separate effort.

a. Recovery, Reuse, and Recycling Requirements. Minimum recovery, reuse, and material recycling targets, sometimes utilizing a phased-in approach, have been shown to improve program effectiveness. The state already has recycled content requirements for purchases by public entities, but these may or may not make an impact on individual manufacturers and their products.

b. Environmental Standards for Recycling Facilities. Any new EOL facilities should meet standards to protect human health and the environment and ensure safe, clean recycling processes for workers and nearby communities. Numerous organizations state this should apply whether a facility is located in the United States or abroad.

c. Material Restrictions. EPR programs may include material restrictions for highly toxic or hazardous materials. Some organizations recommend that the precautionary principle should be applied to the decision-making process used to determine materials bans. This principle states that when "an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."[12] If a material has inherently harmful properties, and/or there is mounting scientific evidence that a material is harmful, the

[12] Science and Environmental Health Network, *1998 Wingspread Statement on the Precautionary Principle*, Accessed on 5-24-07. Available at: http://www.sehn.org/precaution.html

precautionary principle, if applied, would call for the material to be phased out and safer substitutes found.

d. Comprehensive environmental performance standards for procurement contracts. EPR programs may incorporate a comprehensive set of environmental standards that cover various topics, often using a flexible point system whereby some criteria are mandatory and additional points are awarded for achieving higher environmental performance. The criteria can address various life-cycle stages, from manufacturing and product design to end-of-life considerations such as take back requirements. The criteria can be voluntary, but referred to by purchasers in bid documents and contracts. Additionally, public policy can refer to standards making their implementation mandatory within the scope of the policy. A key feature of standards is that complex information, along with verification, can be easily communicated and incorporated into purchasing decisions resulting in demand driven implementation. Examples include the Leadership in Energy and Environmental Design (LEED) Green Building Rating System, the California Sustainable Carpet Standard, and the Electronic Product Environmental Assessment Tool (EPEAT).

5. Individual versus Collective Responsibility

The degree of cooperation among producers in fulfilling their responsibilities is often referred to as individual-versus-collective responsibility. When a producer takes responsibility for the EOL management of their own products it is *individual responsibility*, while if producers in the same product group together fulfill their responsibility, regardless of the brand, it is *collective responsibility*. European studies have shown that individual responsibility programs have created stronger feedback loops to product designers so manufacturers more directly benefit from changes that lower EOL costs (e.g., electronic equipment and automobiles in Japan and Sweden). In contrast, collective systems tend to dilute the feedback loop between recyclers and product designers, and are more likely to result in some manufacturers subsidizing other manufacturers; there are few or no incentives to spend extra resources enhancing product design to reduce EOL impacts. However, collective responsibility tends to be less expensive to administer.

It is possible to have individual producer responsibility within a collectively-organized industry-run compliance system, as has been done in Europe for some electrical and electronic equipment products. Such systems need to identify all manufacturers and importers and their market shares, along with marking products/components so the financial responsibility is individually determined, even though products are physically handled collectively.

6. Funding

Fees can be collected in a manner to provide appropriate incentives to producers and consumers, and if the product pricing internalizes the total costs associated with a product, then consumer will incorporate the full costs into their purchasing decisions. If all

producers pay the same fee, regardless of the impacts of their products, the fee doesn't provide an incentive to improve design as there isn't a feedback loop to the producer that provides a direct benefit. Furthermore, innovative producers may end up subsidizing other producers. This suggests that the most effective systems will differentiate fees within a product category, perhaps having reduced fees for products meeting certain environmental performance criteria. Fees that differentiate the end-of-life costs provide a reward to those manufacturers designing and producing products with least environmental impact. The drawback with differential fees is greater complexity and potentially higher administrative costs.

Other considerations associated with fees include whether the fee is visible to consumers or incorporated in the price, where the fee is collected, how the fees are consolidated, who manages the funds collected and who provides oversight. Administratively, it is easier to collect from fewer entities suggesting that fees collected at the point of manufacture may be preferable to those collected downstream where there are more collection points. If the consumer is likely to be influenced significantly and positively though a visible fee, then a fee or deposit at the point of sale may be preferable. In other words, what is considered most beneficial may vary product by product.

To ensure higher consumer participation rates, some EPR advocates recommend that consumers should not have to pay an additional fee at the time they take back a product.

7. Competition Among Take Back Systems – A Level Playing-field

Competition is a fundamental requirement for developing efficient systems. This means that it must be possible for new actors to enter a market and compete on equal terms. Applied to EPR, it means that it should be feasible for alternative collection, treatment, and recycling systems to be established over time. Systems that create a level playing field also protect existing manufacturers from being placed at a competitive disadvantage related to new market entrants when determining responsibility for historic or orphan wastes.

Some experts say that producers should be able to select the way they want to achieve producer responsibility, such as establishing their own systems and partly or fully using the services of other organizations, provided all occupational health and safety and environmental standards are met. Additionally, if the producer is able to leave a system or join a new one, it will encourage each system to continuously improve.

8. Labeling and Consumer Notification

For consumers and end-of-life managers, manufacturers need to clearly communicate information about a product and how to manage it at EOL. Typically this is accomplished through product labels and websites that explain:

- hazardous materials contained in the product; and
- requirements for safe EOL management and recovery of the product.

9. Ease of Implementation

Programs that offer ease of implementation are likely to offer reduced administrative costs. In contrast, systems that allow for greater differentiation may provide greater incentives to manufacturers to improve products, but are inherently more complex. Consequently, ease of implementation has to be balanced with other sometimes conflicting goals.

10. Restrictions on End-of-Life Options

a. Landfill Bans

To foster cradle-to-cradle EPR programs, there could be a phase out plan for products going to landfills or to lower end uses. Landfill bans complement some of the more notable successful take back programs, such as those for auto batteries and used oil.

b. Export Bans

Some organizations recommend that EPR programs prohibit export of EOL product waste or residuals to other countries. Currently, much product waste is sent to developing countries. For example, environmental groups have traced the dumping of electronic waste to Asia where communities are exposed to highly hazardous substances collected elsewhere on an ongoing basis (see Basel Action Network, www.ban.org, for more information). Importers of products may be assigned responsibility for their part of the product chain. Some groups recommend that the original equipment manufactures be liable for the final fate of their products.

11. Enforcement and transparency

Most experts indicate that a designated oversight entity needs to be responsible for ensuring that all producers comply with the established requirements and that collection targets are being met. Producers should submit regular performance reports to the oversight entity. Penalties could be considered, if producers fail to meet the established requirements, or conversely, financial incentives could be offered for meeting or exceeding program requirements, which could also drive program improvements. Full public access to this information is important. Several organizations have indicated that oversight and enforcement is an appropriate role for government. It could also be appropriate for a neutral third-party organization. The entity responsible for overseeing the financial aspect of the program should be required to post audited financial statements to increase accountability.

Next Steps

Next steps to continue implementation of Strategic Directive #5 include:

1. July 2007 Report to the Board on End-of-Life Management Alternatives for Household Hazardous Waste

2. Board update in July on implementation of the Electronic Waste Recycling Act
3. Feasibility analysis of various approaches to increasing producer responsibility and recommendations to the Board by Fall/Winter 2007
4. Legislature Report due January 1, 2008, which includes direction to the Board to evaluate the feasibility of a “manufacturer responsibility” or “take back” program, with a focus on State government procurement.

IV. Key Discards in Municipal Solid Waste in California and the United States

Products/materials that Generate the Most Municipal Solid Waste Discards in California and United States

Note: CIWMB staff analyzed state and national data because the national data has additional product specific information, along with trend information. Some products/materials appear in different rows because California Integrated Waste Management Board and the US Environmental Protection Agency use different, but often similar, categories. As evident, there are data gaps and additional information is welcome.

Products/materials[13]	Est. % total discard in CA 2003[14]	Est. % total discards in US 2005[15] (EPA data)	General trend?[16] (EPA data)	Comments Producer Responsibility related activities by the State of CA
Durables				
Furniture and Furnishings		5.3	↑	Environmental standards exist for state purchases
Bulky items (e.g., furniture, mattresses, and other large items)	3.4			
Other misc durables (includes sporting equipment, luggage, etc)		8.2	↑	
Carpet (Carpet and Rugs - EPA)	2.1	1.8	↑	CARE, Carpet Standard
Clothing and footwear		4.1	↑	
Textiles	2.4			
Major appliances	1.5	.8	↓	
Small appliances		0.5	=	
Electronics e.g., brown goods, televisions, other electronics (Selected consumer electronics – EPA)	1.2	1.4	↑	Electronic Waste Recycling Act, California's Universal Waste Rule, banned from landfills
Vehicles (see Wastes with Hazardous Substances, Auto Shredder Residue)				

[13] Includes products that comprise 2% of total discards by weight in either US or California data or products that are known to have potential hazardous and are more than zero percent of discards. For example, lead acid batteries and used oil are not showing up in the data because they are diverted from landfills.
[14] California Integrated Waste Management Board, *2004 Statewide Waste Characterization Study,* Accessed on 5-22-07. Available at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2004
[15] US Environmental Protection Agency, *Municipal Solid Waste in the United State, 2005 Facts and Figures*, October 2006, publication number: EPA530-R-06-011. See tables on pgs 70,77, and 88. Available at: http://www.epa.gov/msw/pubs/mswchar05.pdf EPA data does not include: Automobile/vehicle salvage materials, Biosolids, Industrial wastes (non-hazardous), construction and demolition waste.
[16] An increasing or downward trend was noted if the change from 2000 to 2004 changed by at least 0.2 of a percent.

Products/materials[13]	Est. % total discard in CA 2003[14]	Est. % total discards in US 2005[15] (EPA data)	General trend?[16] (EPA data)	Comments Producer Responsibility related activities by the State of CA
Packaging				
Packaging (glass)		4.9	=	Beverage Container Recycling and Litter Reduction Act
Uncoated corrugated cardboard (Corrugated boxes - EPA)		5.3	↓	
Folding cartons		2.6	↓	
Remainder composite paper e.g., waxed corrugated cardboard, aseptic packages, tissue, paper towels, blueprints, fast food wrappers, carbon paper, self-adhesive notes, and photos.	5.7			
Wood packaging e.g., pallets		4.3	↑	
Glass bottles (all colors) (Beer and soft drink bottles – EPA)	1.6	3.0	↑	Beverage Container Recycling and Litter Reduction Act
Other plastic containers (non-beverage)		1.6	↑	Rigid Plastic Packaging Container (RPPC) law may address some containers in this category
Plastic films (several types) (Plastic wraps – EPA)	3.0	1.6	↑	
Other plastic packaging		2.6	↑	Rigid Plastic Packaging Container (RPPC) law may address some containers in this category
Plastic grocery and merchandise bags	0.4			
Organics				
Food scraps	14.6	17.1	↑	
Leaves, grass, prunings and trimmings (Yard trimmings-EPA)	6.5	7.2	↓	
Misc. inorganic wastes		2.2	=	
Remainder/composite organics e.g., diapers, sawdust, feces, leather, hair, rubber hoses.	4.4			
Metals				
Other ferrous metal e.g., structural steel beams, metal clothes hangers, metal pipes, stainless steel cookware, security bars, and scrap ferrous items.	2.4			
Remainder/composite metal	2.5			

Products/materials[13]	Est. % total discard in CA 2003[14]	Est. % total discards in US 2005[15] (EPA data)	General trend?[16] (EPA data)	Comments Producer Responsibility related activities by the State of CA
Paper				
Newspaper	2.2	.8	↓	Recycled content requirements
Directories		2.2	=	
Other commercial printing		3.9	=	
Tissue paper and paper towels		2.1	↑	
Disposable diapers		2.2	↑	
Other nonpackaging paper		2.6	↑	
Other misc paper	3.5			
Other misc. nondurables		2.5	=	
Plastics				
Remainder/composite plastic e.g., auto parts, drinking straws, foam cups & plates, produce trays, packing peanuts, strapping, kitchen ware, toys, laminate, vinyl, plastic lumber, insulating foams.	2.2			
Construction related				
Lumber e.g., dimensional lumber, lumber cutoffs, engineered wood such as plywood and particleboard, pallets, wood scraps, wood fencing, wood shake roofing, and wood siding.	9.6	(see wood packaging)		Treated wood: California's Universal Waste Rule, banned from landfills
Concrete	2.4			
Remainder/composite C&D e.g., brick, ceramics, tiles, toilets, sinks, fiberglass insulation	3.6			
Wastes with Hazardous Substances*				
Automobile/vehicle Shredder Residue		2 [17]		Regulated material, if meets certain requirements it can be used as alternative daily cover in landfills
Batteries (all types)	0.1			California's Universal Waste Rule, banned from landfills
Electronics (see Durables)				
Major and small appliances (see Durables)				

[17] US Environmental Protection Agency, Municipal Solid Waste, Automotive Parts website, http://www.epa.gov/msw/auto.htm, accessed 5-22-07. 5 million tons of automobile shredder residue is disposed in landfills in the US each year, which is about 2 percent of all discards (245.7 million tons) as reported by the *US EPA in Municipal Solid Waste in the United State, 2005 Facts and Figures.*

Products/materials[13]	Est. % total discard in CA 2003[14]	Est. % total discards in US 2005[15] (EPA data)	General trend?[16] (EPA data)	Comments Producer Responsibility related activities by the State of CA
Mercury containing products				California Mercury Reduction Act of 2001, Dry Cell Battery Management Act, California's Universal Waste Rule, banned from landfills
Pesticides&containters				California's Universal Waste Rule, banned from landfills
Pharmaceuticals				Sharps/needles: California's Universal Waste Rule, banned from landfills
Remainder / composite special wastes e.g., asbestos-containing materials, auto fluff, auto-bodies, untreated medical waste/pills/hypodermic needles.	1.2			Asbestos: California's Universal Waste Rule, banned from landfills
Tires (rubber tires – EPA)	0.3	1.7	↓	California Tire Recycling Act, automobile tires are banned from landfills

* Products identified as zero percent of discards are not in the table. This includes: paint, vehicle and equipment fluids, used oil, remainder composite household hazardous waste (includes fluorescent lamps), sewage sludge, industrial sludge, treated medical waste. Pharmaceuticals are mentioned in reports, but their contribution to discards is unknown.

V. Producer Responsibility: Existing California Programs and Initiatives

The Board does not currently implement or oversee any comprehensive producer responsibility programs. However, the Board is involved in several efforts that entail selected components of what is considered product or producer responsibility. These typically are intended to ensure that all those involved in the lifecycle of a product share responsibility for reducing its public health and environmental impacts. This overview describes current programs and initiatives.

The following CIWMB existing program activities are described in this overview:

- Report on End-of-Life Management Alternatives for Household Hazardous Waste
- Electronic Waste Recycling Act of 2003 (with DTSC) - Board Update
- Legislature Report due January 1, 2008
- National Product Stewardship Institute and California Product Stewardship Council
- Paint Product Stewardship Project (national)
- Universal Waste Take-It-Back Campaign (with DTSC)
- Carpet Memorandum of Understanding and Carpet Standard
- Environmentally Preferable Purchasing (EPP) and EPP Task Force
- EPP Best Practices Manual
- Electronic Product Environmental Assessment Tool (EPEAT)
- Rigid Plastic Packaging Law
- Minimum content laws: plastic trash bags and newsprint

Other laws related to producer responsibility are implemented by Cal/EPA, other Boards or Departments within Cal/EPA, and the Resources Agency (Department of Conservation, Division of Recycling) and should be considered as the Board moves forward with implementation of its Strategic Directive on Producer Responsibility. The following programs have been identified thus far and are described briefly:

- Cal/EPA Green Chemistry Initiative
- DTSC Toxics in Packaging Prevention Act
- ARB Consumer Products Program
- ARB Ozone Limits on Indoor Air Cleaning Devices
- Division of Recycling, Recycling Market Development and Expansion Grant Program

CIWMB Existing Programs and Activities

The Board's current efforts related to producer responsibility are listed below. They reflect a range of voluntary and mandatory systems and vary significantly in the degree of responsibility required of producers/manufacturers.

Report on End-of-Life (EOL) Management Alternatives for Household Hazardous Waste, including Universal Waste
The Board will hear the results of this analysis, which was funded by a contract, in July.

Electronic Waste Recycling Act of 2003 - Board Update
The Board will hear an update on the status of the Electronic Waste Recycling Act in July, including findings from an analysis of the 2005 Net Cost Reports and preliminary findings from the 2006 Net Cost Reports. The Act established an advance recycling fee on the retail sale of covered electronic devices. Retailers remit the fee to the Board of Equalization who in turn deposits the fee into the E-Waste Recovery and Recycling Account. CIWMB makes payments to approved e-waste collectors and recyclers for the costs to collect and recycle covered electronic waste generated in California. All parties have a role to play under the Act. Manufacturer/producer responsibility consists of notification to retailers that sell their products, providing basic consumer information on recycling opportunities and annual reporting to the Board. The annual report covers: sales data; the use of hazardous materials in devices; the recyclability of materials in devices; and their design-for-the-environment efforts.

Important opportunities and potential challenges include potential federal electronic waste legislation. The Board will remain engaged with efforts to enact federal electronic waste management legislation with a manufacturer/producer responsibility approach. Such legislation could include pre-emption language and although SB 20/50 contains specific pre-emption conditions, California could face significant pressure to sunset its law in favor of the national program.

Report to the Legislature due January 1, 2008
Supplemental 2006/07 Budget language includes direction to the Board to evaluate the feasibility of a "manufacturer responsibility" or "take back" program, with a focus on State government procurement. An interdivisional workgroup has been formed to complete this evaluation. Staff at the Department of General Services has been assigned to coordinate with CIWMB. The report will be submitted to the legislature by January 1, 2008. Following is the language from the Senate Budget Committee in the recent Budget process:

> The Board, in conjunction with the Department of General Services, shall evaluate the feasibility of implementing a manufacturer responsibility or "take-back" program for those goods purchased by the California State Government. This study should focus on those materials that are, or could be, most conducive to reuse or recycling by the manufacturer together with materials that make up a substantial portion of the State government waste stream. Further, it should assess the effectiveness of current take back provisions in state contracts. This evaluation shall result in a report to the legislature by January 1, 2008 and shall include an

overview of similar activities that are occurring across the country or around the world that may serve as a model for California in the future.

In examining potential approaches to promoting increased manufacturer/producer responsibility, those implemented in Canada and the European Union will be included. Specifically, several Canadian provinces have Stewardship Regulations that establish "eco fees," managed by manufacturer-controlled entities. The European Union passed the Restriction of Hazardous Substances and the Waste Electronic and Electrical Equipment Directives requiring manufacturers of electronic products to reduce or eliminate certain hazardous materials in their products and take responsibility for the end-of-life management of their products. Europe has also adopted strict packaging laws which reduce the amount of packaging waste going to landfills and support the demand for post-consumer recycled content products.

Product Stewardship Institute

The CIWMB is very involved in the national Product Stewardship Institute (PSI) whose mission is to pursue initiatives to ensure that all those involved in the lifecycle of a product share responsibility for reducing its health and environmental impacts. Board staff sits on the Board of Directors of the PSI and is very active in dialogues with industry to address specific waste streams including paint, mercury containing products, pesticides and carpet (see below).

California Product Stewardship Council (CPSC)

Local agencies have joined together to form the CPSC whose mission to the shift California's product waste management system from one focused on government and consumer financing to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability. CIWMB is a non-voting member of the CPSC Steering Committee and is involved in strategic planning and developing an action plan. The group may look to policy and/or legislative solutions to the up-front management of specific waste streams.

Paint Product Stewardship Institute Dialogue

CIWMB has provided funding for the Dialogue and staff sits on the Steering Committee and several work groups. The group is making significant progress toward establishing a nationally coordinated leftover paint management system. The Board is one of over 60 entities discussing a potential Memorandum of Understanding outlining specific actions and projects that will lead to a nationally coordinated system. Paint manufacturers have been very involved in the Dialogue and have contributed over $500,000 in support of specific projects. Long term financing discussions began in September 2006 and were addressed in depth at the April 2007 meeting.

Universal Waste Take-it-Back Campaign

CIWMB and DTSC are conducting a campaign to encourage retailers to offer take-back programs for certain universal wastes such as batteries and fluorescent light tubes, at no cost to the consumer. These efforts may include a role for manufacturers.

Carpet

The Department of General Services adopted the *California Gold Sustainable Carpet Standard* in May 2006. Among other things, this standard establishes ten-percent post consumer content, low

chemical emissions, and take-back requirements for carpets purchased by the State of California. This represents a significant effort by California to reward manufacturers who demonstrate a commitment to environmental excellence and include recycled content in their products. The *California Gold Sustainable Carpet Standard* grew out of a national effort to develop an environmentally preferable carpet rating system. This consensus-based standard is registered by NSF International with the American National Standards Institute (ANSI) as a Draft Standard for Trial Use (*NSF 140-2005 Sustainable Carpet Assessment Standard*). California's interagency EPP carpet working group (DGS, CIWMB, DHS, OEHHA, DTSC and others) developed the more stringent California standard to reflect California's areas of concern.

Environmentally Preferable Purchasing (EPP)

EPP is the procurement of goods and services that have a reduced effect on human health and the environment when compared with competing goods or services that serve the same purpose. This involves making comparisons which take into consideration, to the extent feasible, raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, disposal, energy efficiency, product performance, durability, safety, the needs of the purchaser, and cost. Almost all of these considerations should be addressed by manufacturers in design-for-the-environment and take-back programs.

The State's EPP Task Force, which the CIWMB co-chairs, participates in national efforts to develop product standards or certifications. Once established, standards or certifications help the state identify products that meet a set of environmental and performance criteria. These include design for the environment and may include take back of the product or its packaging. Examples of products include: carpet, recycled paint, office furniture, textiles, and computers and monitors.

The Board will continue to work closely with the Department of General Services to promote implementation of EPP practices in general and enforcement of recycled content and performance standards to state agencies and to expand these practices to local governments. In addition, to assure we are leading by example, Cal/EPA Boards and Departments integrate advances in EPP into their business practices through the agency-wide Environmental Management System (EMS). The EMS has established performance targets focused on continual improvement of Environmentally Preferable Procurement (EPP), an important market driver for increasing producer responsibility. Targets are considered and approved by the agency-wide top management group on a two-year continual improvement cycle and coordination is maintained with the EPP Task Force. More information can be found at www.calepa.ca.gov/ems .

Environmentally Preferable Purchasing Best Practices Manual

The State's Environmentally Preferable Purchasing Best Practices Manual (Manual) promotes and encourages manufacturer responsibility/design for the environment/take-back programs in the following ways:

(1) The Manual addresses end-of-life management, responsible manufacturers, and take-back programs. These issues are described and promoted, as they apply to specific products, throughout the Manual. The final Manual will contain 42 subject matter specific sections. Forty sections are now on-line at http://www.green.ca.gov/EPP/Introduction/default.htm .

(2) The Introduction of the Manual describes the cradle-to-cradle approach in which products are designed for reuse and recycling so materials can be separated from one another to eliminate contamination. If everything is reused, there is zero waste.

Electronic Product Environmental Assessment Tool (EPEAT)

The development of the Electronic Product Environmental Assessment Tool (EPEAT) was prompted by growing demand by institutional purchasers for an easy-to-use evaluation tool that allows the comparison and selection of electronic products based on environmental performance. The electronics industry welcomed EPEAT as a tool to provide a clear and consistent set of performance criteria for the design of products and an opportunity to secure market recognition for efforts to reduce the environmental impact of its products. Manufacturer/producer responsibility, end-of-life management, take-back programs, and design for the environment are all recognized and given credit by the EPEAT.

The Rigid Plastic Packaging Law

While manufacturers are not required to manage or take back their packaging or products at end of life, they are required to reduce packaging, use post-consumer material in packaging, and/or provide a replacement product for reusable or refillable packages. As a result, the law has reduced packaging waste and supported markets for post-consumer material. In addition, the Board continues to support voluntary, collaborative efforts to increase plastic collection. Board staff is actively working with stakeholders to develop projects to increase plastic collection. Results from these efforts should be available by the fall of 2009.

Minimum Content Laws: Plastic Trash Bags and Newsprint

Manufacturers and wholesalers selling plastic trash bags in California must meet the mandates and be certified annually by CIWMB before State of California agencies and departments can purchase from them. Plastic trash bag manufacturers selling trash bags in California are required to meet either one of the following:

(1) Plastic trash bags contain a quantity of recycled plastic postconsumer material (RPPCM) equal to at least 10 percent of the weight of the regulated bags.

(2) At least 30 percent of the weight of material used in all of its plastic products is RPPCM.

Wholesalers are required to certify the names of trash bag manufacturers from which they purchased plastic trash bags.

California law mandates the use of a specified amount of recycled-content newsprint (RCN) by printers and publishers located in California. The CIWMB implements a program to encourage and track the use of RCN. At least 50 percent of the newsprint used by each printer and publisher (consumers) in California must contain a minimum of 40 percent postconsumer paper fiber. Consumers must report annually to the CIWMB the total amount of RCN and the total amount of non-RCN used. Manufacturers must report the de-inked pulp received and/or produced, the postconsumer paper received, and the amount of RCN shipped to California. State of California agencies and departments cannot purchase newsprint from manufacturers who have not submitted certifications to the CIWMB.

Cal/EPA Green Chemistry Initiative

The Green Chemistry Initiative was announced May 1, 2007. The Initiative is expected to yield opportunities to improve producer responsibility for pollution prevention and cradle-to-cradle chemical management as well as improve coordination across state government. This collaborative initiative may yield opportunities to improve producer responsibility for cradle-to-cradle material management. The Green Chemistry Initiative will provide recommendations for developing a consistent means for evaluating risk, reducing exposure, encouraging less-toxic industrial processes, and identifying safer, non-chemical alternatives. Most importantly, the Green Chemistry Initiative will ensure a comprehensive and collaborative approach, to increase accountability and effectiveness of environmental programs across state government. In a memo initiating the Green Chemistry Initiative, the Secretary for Environmental Protection wrote: "In the absence of a unifying approach, interest groups and policy makers have been attempting to take these issues on one-by-one. Product by product, chemical by chemical, and now even city by city approaches can often have unintended, even regrettable consequences, even with the best of intentions. I believe we need to develop a coordinated, comprehensive strategy…." More information can be found at http://www.calepa.ca.gov/PressRoom/Releases/2007/PR8-050107.pdf

Programs Administered by other Boards and Departments within Cal/EPA

DTSC Toxics in Packaging Prevention Act

The Department of Toxic Substances Control (DTSC) administers the Toxics in Packaging Prevention Act to reduce toxicity, without discouraging use of recycled materials, in packaging production. In particular lead, cadmium, mercury, and hexavalent chromium are targeted to prevent contamination of soil and groundwater surrounding landfills (Health and Safety Code, division 20, chapter 6.5, article 10.4, beginning with §25214.11). More information can be found at http://www.dtsc.ca.gov/HazardousWaste/Mercury/upload/HWMP_FS_Toxics-Packaging.pdf .

ARB Consumer Products Program

The Air Resources Board (ARB) administers the Consumer Products Program to reduce the amount of volatile organic compounds (VOCs) that are emitted from the use of consumer products in homes and institutions. "Consumer product" means a chemically formulated product used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products; but does not include other paint products, furniture coatings, or architectural coatings. VOCs that are emitted into the air from consumer products and other sources (motor vehicles, stationary sources, etc.) react with other pollutants under sunlight to form ground-level ozone and particulate matter (PM 10), the main ingredients in smog. Reducing VOC emissions from consumer products therefore plays an integral part in ARB's effort to reduce smog in California. More information can be found at http://www.arb.ca.gov/consprod/consprod.htm .

ARB Ozone Limits on Indoor Air Cleaning Devices

California Assembly Bill 2276 (2006, Pavley), signed by Governor Schwarzenegger in September 2006, directs the Air Resource Board (ARB) to develop and adopt a regulation to limit the ozone

emitted from indoor air cleaning devices in order to protect public health. The bill requires the ARB to adopt the regulation by December 31, 2008. As institutional purchasers and individual consumers become more aware of this issue they may replace problematic air cleaners. The need for proper end-of-life management of these "legacy" devices may be of interest to the Integrated Waste Management Board, DTSC, and local government, depending on the quantity of devices expected to be disposed and current infrastructure. Further research is needed to determine whether this transition would generate end-of-life management concerns. More information can be found at http://www.arb.ca.gov/research/indoor/indoor.htm .

Program Administered by Resources Agency, Department of Conservation

Division of Recycling, Recycling Market Development and Expansion Grant Program
Assembly Bill 28 (Chapter 753, Statutes of 2003) created a new grant program beginning in 2004 for recycling market development and expansion-related activities aimed at increasing the recycling of beverage containers. The program also aims to create more California jobs. Results of the grant projects will accomplish these goals through (1) new and expanded end-uses for aluminum, glass and plastic beverage containers, and (2) improved supplies and quality of recycled feedstock for use in manufacturing. Project results may identify opportunities for producer responsibility approaches to increase beverage container recycling and products made from recycled beverage containers. More information can be found at http://www.consrv.ca.gov/dor/grants/rmdeg.htm .

VI. 2007 Legislation Related to Producer Responsibility

Measure	Topic - Status	Description
AB 501 Swanson A-04/30/2007 html pdf	**Pharmaceutical devices.** 05/08/2007-In committee: Set, second hearing. Hearing canceled at the request of author.	This bill would require pharmaceutical companies whose products are dispensed through various prefilled injection devices to provide each person for whom the product is prescribed with options for safe disposal consistent with the Medical Waste Management Act.
AB 722 Levine I-02/22/2007 html pdf	**Energy: general service incandescent lamp.** 05/22/2007-In committee: Hearing postponed by committee. (Refers to 5/16/2007 hearing)	This bill would prohibit the sale of general service incandescent lamps in California on or after January 1, 2012.

AB 1109 Huffman A- 04/12/2007 html pdf	**Energy resources: lighting efficiency: hazardous waste.** 05/16/2007-In committee: Set, first hearing. Referred to APPR. suspense file.	This bill would establish the California Lighting Efficiency and Toxics Reduction Act (Act); would require DTSC to prescribe, by regulation, schedules for reducing the maximum levels of mercury and lead in general purpose lights, and would require manufacturers of general purpose lights containing hazardous waste to have a system in place for collection and recycling of end-of-life-general purpose lights.
AB 1193 Ruskin A- 03/29/2007 html pdf	**Mercury-added thermostats: collection program.** 05/02/2007-In committee: Set, first hearing. Referred to APPR. suspense file.	This bill would create the Mercury Thermostat Collection Act of 2007 and would require all manufacturers that sell thermostats with mercury to establish and maintain a take-back collection and recycling program for out-of-service mercury-added thermostats, beginning no later than January 1, 2008.
SB 291 Simitian A- 05/02/2007 html pdf	**Pollution prevention: California Design for the Environment Program.** 05/02/2007-From committee with author's amendments. Read second time. Amended. Re-referred to Com. on APPR.	Would authorize the Director of Toxic Substances Control to establish the California Design for the Environment Program, to provide a forum for soliciting comments about green chemistry, green engineering, and design for the environment from a broad range of participants from academia and nongovernmental organizations, with expertise and interest in sustainability and green chemistry . The bill would authorize the director to establish linkages with other states' agencies and university-based programs, in order to draw on the knowledge of other experts. The bill would require the director, to the extent practicable, to use existing resources to achieve the purposes of the program, and would authorize the director to seek and receive specified funding to support the program. This bill contains other existing laws.
SB 966 Simitian A- 04/30/2007 html pdf	**Pharmaceutical drug disposal.** 05/17/2007-Motion to reconsider made by Senator Simitian. Reconsideration granted.	This bill would require every retailer of a drug (pharmaceutical), as defined, on and after July 1, 2008, to have in place a system for the acceptance and collection of drugs (pharmaceuticals) for proper disposal.

VII. Producer Responsibility Bibliography

The reports and websites presented below are not endorsed by the CIWMB. Rather, this initial list highlights information that might be helpful as the CIWMB considers producer responsibility approaches.

Reports

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2. Fishbein, Bette, *EPR: What Does It Mean? Where Is It Headed?* INFORM, Inc. 1998. Available at http://www.informinc.org/eprppr.php
3. Fishbein, Bette, *The EPR Policy Challenge for the United States*, INFORM, Inc. 2000. 60 pages. http://www.p2pays.org/ref/14/13824/EPR3.pdf. This is part of larger report. The complete report is available at http://www.p2pays.org/ref/14/13824.htm .
4. Ministry of Water, Land, and Air Protection, British Columbia, Canada. *British Columbia Industry Product Stewardship Business Plan 2002/2003 – 2004/2005*, 2002. 18 pages. Available at http://www.env.gov.bc.ca/epd/epdpa/ips/pdf/prodstew_plan.pdf .
5. Organisation for Economic Development and Cooperation (OECD). *Extended Producer Responsibility, A Guidance Manual for Governments*, 2001. 161 pages. Available at http://www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&lang=EN&st1=972001041p1 .
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7. Walls, Margaret. *The Role of Economics in Extended Producer Responsibility: Making Policy Choices and Setting Policy Goals.* Resources for the Future, March 2003. 26 pages. Available at http://www.rff.org/Documents/RFF-DP-03-11.pdf .

Websites

1. British Columbia's Product Stewardship Programs:

   http://www.env.gov.bc.ca/epd/epdpa/ips/
2. California Product Stewardship Council (CPSC): http://www.caproductstewardship.org/
3. Clean Production Action: http://www.cleanproduction.org/Producer.Key.Examples.php
4. European Union, Environmental Topics: http://ec.europa.eu/environment/abc.htm#E

5. Product Policy Institute (PPI): http://www.productpolicy.org/
6. Product Stewardship Institute, Principles of Product Stewardship: http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=231
7. Raymond Communications: http://www.raymond.com/
8. Responsible Purchasing Network: http://www.responsiblepurchasing.org
9. Zero Waste Alliance: http://www.zerowaste.org/